

# Notice of Allowability

Application No.

10/731,409

Examiner

Ruth C. Rodriguez

Applicant(s)

YOKOYA ET AL.

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## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to communication filed on 20 December 2006.
2. ☒ The allowed claim(s) is/are 1 and 3-5.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 12/8/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance: Onuma discloses an injection device comprising an injection screw, a ball screw shaft operatively coupled to the injection screw by a nut member, a bearing sleeve coupling the ball screw shaft to the motor shaft where the bearing sleeve has an inner diameter, a flange, a rear portion and an inner spline. Onuma also fails to teach that the bearing sleeve has an annular groove provided at the inner periphery near an opening and that a ring member is disposed in the annular groove. Although Shiraishi teaches an injection device comprises a bearing sleeve. The bearing sleeve has an inner diameter, a flange, a rear portion and an inner split. The inner diameter engages one end of a screw shaft. The flange is integrally formed on an outer periphery of the bearing sleeve. The rear portion is disposed at the rear of the flange that is formed into a size fitted to a recess formed inside of an end of the motor shaft. The inner spline is disposed at an inner periphery of the bearing sleeve. The bearing sleeve is detachably mounted to the motor shaft by fitting the rear portion of the bearing sleeve into the recess and fastening the flange on an end face of the motor shaft with a bolt such that the inner spline serves as the motor shaft spline. The screw shaft spline is formed on an outer periphery on a shaft end portion of the screw shaft. Shiraishi fails to disclose that bearing sleeve is provided between the ball screw shaft and the motor shaft and that the bearing sleeve has an annular groove provided at the inner periphery near an opening. Accordingly it would not have been obvious to one having ordinary skill in the art at the time the

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invention was made to have the bearing sleeve with an annular groove provided at the inner periphery near an opening and that a ring member is disposed in the annular groove of the bearing sleeve for the device disclosed by Onuma.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Feroy (US 3,329,069), McArthur et al. (US 4,792,255), Takatsugi et al. (US 5,344,303), Hasegawa et al. (US 5,800,134), Floyd et al. (US 5,993,186), Koide et al. (US 6,499,989 B2), Onuma et al. (US 2003/0224085 A1), Shiraishi et al. (US 2003/0230829 A1), Markley (US 2004/0031475 A1), Hsu (US 2004/0071809 A1), Niglov (US 2004/0182185 A1) and European Patent Document EP 0 563 397 A1 are cited to show state of the art with respect to coupling structures having some of the features being claimed by the current application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruth C. Rodriguez whose telephone number is (571) 272-7070. The examiner can normally be reached on M-F 07:15 - 15:45.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J. J. Swann can be reached on (571) 272-7075.


Submissions of your responses by facsimile transmission are encouraged. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-6640.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ruth C. Rodriguez  
Patent Examiner  
Art Unit 3677

rcr  
March 5, 2007

  
**ROBERT J. SANDY**  
**PRIMARY EXAMINER**